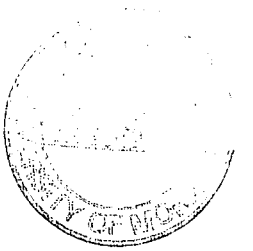
SERVICE CAPABILITY ASSESSMENT OF HARDWARE IN SRILANKAN ICT SECTOR

By

R.S. Gamage



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Supervised

By

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DECLARATION

"I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any University to the best of my knowledge and belief it does not contain any material previously published, written or orally communicated by another person or myself except where due reference is made in the text. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans, and for the title and summary to be made available to outside organizations"

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Signature of the Candidate Date

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To the best of my knowledge, the above particulars are correct.

....19/1/2005.....

Supervisor Date

(Dr. Ajith Pasqual) Date

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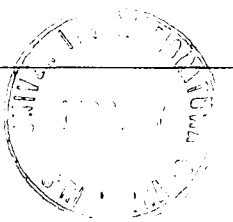

ABSTRACT

Specially Airlines, Banks and Telecommunication firms who are maintaining 24hrs online mission critical applications, the hardware downtime means lost productivity, lost revenue and many times lost customers. Having effective operation and maintenance capability, these services can be operated at a very low failure rate to remain competitively in the business. On the other hand minimization of the maintenance cost is the competitive edge of the business.

These firms are continuously facing a problem of maintaining their services with a high reliability due to the lack of service capability levels of the hardware. This is specially relevant to the Sri Lankan ICT Sector where it doesn't have highly reliable Electricity Infrastructure. Due to the unreliable Electricity Infrastructure all the supporting hardware such as UPSs, servers, switches and routers etc. are frequently get affected and resulting reduced lifetime and frequent interruptions of supporting services. Therefore the challenge is to select the cost effective best-fit strategy with the business objectives.

According to the service capability assessment of Sri Lankan ICT Sector (fine tuned sample), the system availability increases with the cost of service at a reducing rate and reaches a maximum at a certain value. Most of the organizations have invested too much than required to maintain their systems at their current availability level. Cost of service is negligible for some firms since they are maintaining 100% redundant systems where it costs only the spares replacement cost. Actually there is a trade off between the cost of redundancy improvement and cost of maintenance criteria creation or improvement.

There are many problems associated with developing a good service strategy for Sri Lankan ICT Sector as identified and explained in the thesis.

ICT organizations should do a thorough analysis on system maintenance at the system design stage or the purchasing stage or even at operational stage to create a best-fit service strategy.

When purchasing a new hardware system; the initial stages Tender documentation stage & Tender evaluation stage, and the purchasing stage have to be addressed so carefully in order to create a best service strategy in achieving the required availability level to face the industry competition successfully. Assessing these strategies in cost perspectives gives a clear picture in selecting the best strategy for implementation. The selected strategy also should be a best fit and achievable strategy.

ICT Organizations who are already having a service strategy also should do a thorough analysis to assess its service capability in terms of availability and cost perspectives. The framework identified and explained in this thesis will be helpful in assessing the existing strategy to continue with the existing strategy or to move into a better strategy.